JULY 1951

FIREMEN

FIFTY-SIXTH YEAR . NATIONAL FIRE PROTECTION ASSOCIATION

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"Within a matter of seconds . . . the blaze was out"

"WE MADE A wonderful stop and a great deal of credit is given to the John Bean High-Pressure pumper," says Fire Chief Joseph L. Trudell, as he explains Bean Fog gun to C. M. Adams, General Manager of Electric Auto-Lite plant in Bay City, Michigan.

"In my position I appreciate efficiency, and let me say I was really impressed with the remarkable efficiency of this piece of apparatus."

THAT'S THE way C. M. Adams, Vice President of Electric Auto-Lite Company, praised the performance of the John Bean High-Pressure Fog Fire Fighter when fire seriously threatened the company's Bay City, Michigan, plant April 20, 1951.

Friction heat started a blaze in the blower system of the huge three-story building which houses Bay City's biggest industry. Flames spread rapidly from basement to roof through a ventilating shaft—had a good start when fire apparatus arrived.

The John Bean High-Pressure unit, *drawing from its own water supply*, went into action *fast*. Flame-smothering fog blanketed the blaze, snuffed it out quickly. This amazing efficiency held losses to $15,000, prevented extensive damage which would have halted defense production and thrown 2,000 employees out of work.

Bay City's prompt action in modernizing its community defense program six months ago with a John Bean High-Pressure Fog Fire Fighter made this remarkable performance possible. Write today for information on how to assure maximum fire protection for *your* town with modern John Bean fire equipment.

Sensational John Bean Features!

- Goes into action immediately because it carries own water supply
- Clears the way for close-up, inside work with protective screen of flame-smothering High-Pressure Fog
- Puts fires out faster because Bean High-Pressure Fog outperforms solid streams 10 to 1
- Practically eliminates water damage by extinguishing fires quickly and efficiently

BAY CITY, Michigan, High-Pressure unit carries two guns of 30 g.p.m. each, 850 pounds pump pressure. Delivered complete with all accessories.

BEAN *original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY AND CHEMICAL CORPORATION

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NEW ROCKWOOD METHODS
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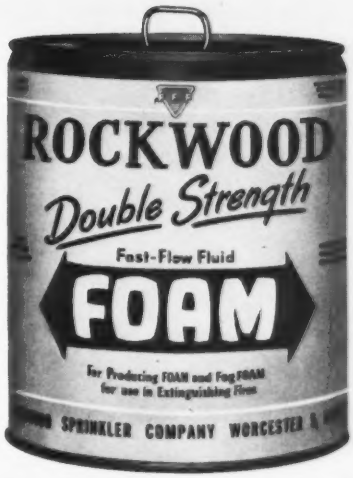
New Rockwood *Double Strength* FOAM Liquid and FogFOAM devices enable fire fighters to cover burning surfaces faster with a blanket of FOAM that completely seals off combustible vapors. The FOAM blanket will quickly reseal if broken by trucks, hose, foot tracks, etc. The new Rockwood method of applying FOAM to fires involving oil, gasoline and other flammable liquids and materials will extinguish fires with far greater speed and with less work than with old style methods. Rockwood FOAM is designed to give you the most efficient results in fire fighting and to protect apparatus from damage. For complete operating and installation data and prices, write today.

The most efficient way to apply Rockwood FOAM Liquid and wetting agent to most fires is thru Rockwood fire fighting devices.

ROCKWOOD

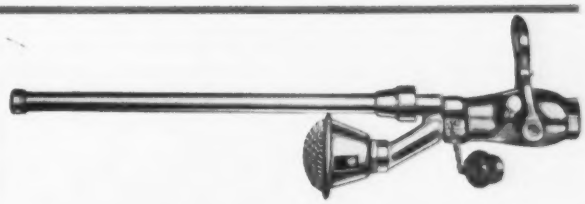
ROCKWOOD SPRINKLER CO.
88 Harlow St., Worcester 5, Mass.
Portable Fire Protection Division



1. Rockwood's new FOAM Liquid produces FOAM and FogFOAM for use in extinguishing flammable liquid fires. It can be automatically mixed with water supplied to the new FFF FogFOAM Nozzle or to the new "FF" Extension by means of the hose line FOAM Eductor — or Rockwood FOAM proportioning systems built into fire trucks. Rockwood regular FOAM is still available for use with Rockwood devices.

2. New *Lightweight* type FFF Rockwood FogFOAM Nozzle with FogFOAM screen. Available in three sizes for service on 1½" and 2½" or 3½" hose. Discharges (1) FogFOAM (with FogFOAM screen) (2) Solid FOAM stream (with FOAM shaper) (3) High velocity WaterFOG pattern.

3. Rockwood FOAM Eductor introduces FOAM Liquid into fire hose lines for use with Rockwood Type FFF FogFOAM Nozzles or "FF" Extension units with SG-60 Nozzles. Eductor can be attached between discharge of fire truck and fire hose line, connected between hydrant and hose line or between two lengths of hose. Separate models are available for FOAM and water wetter.



4. Rockwood *Lightweight* "FF" Extension unit with SG-60 WaterFOG Nozzle attached. The "FF" Extension can be easily attached to a ¾", 1" and 1½" SG-60 WaterFOG Nozzle by simply removing high velocity WaterFOG tip and inserting "FF" Extension. This unit discharges high velocity FogFOAM thru FOAM screen or long range solid FOAM stream thru FOAM shaper — also high velocity WaterFOG, solid water stream or low velocity WaterFOG.

IS THIS YOUR CITY?
FOR
FIRE
FIRE
OPEN
THEN
PULL DOWN
HOOK
32
TOO FEW - TOO LATE!
Nearly 400,000 fires and two-thirds of the life loss by fire occur annually in residences. Delayed alarms and tragic consequences are frequently caused by inadequate box distribution in residential districts.

TRADE MARK
GAMEWELL
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The GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASSACHUSETTS
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Firemen

Volume 18 — Number 7

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Cover Photo

Fighting a fire calls for more than playing a hose stream. There sometimes occurs a situation where lines must be moved rapidly to new positions to cover exposures or to knock down some portion of the fire that can be attacked successfully. Hosemen must move quickly and surely, for mistakes can mean injured fire fighters or loss of control of the fire.

The cover photo for this month (*World Wide Photo*) shows four fire fighters of the Jacksonville, Florida, Fire Department moving "on the double." This fire occurred shortly after midnight on May 13 in the downtown area of Jacksonville. A total of six buildings were involved in what old-timers described as "the hottest fire we ever saw." Estimated loss on the buildings was $18,600 and on their contents was $12,600, another indication that many of the hottest fires do not necessarily result in the "largest losses".

IAFC Fire Prevention Campaign

Beginning the first day of this past June the International Association of Fire Chiefs launched the fire prevention campaign announced in the February issue of FIREMEN. A personal letter was sent by Chief John H. Alderson, President of the IAFC, to more than 13,000 member and non-member chiefs throughout the country, requesting their support and detailing the program that is to be followed. Jay W. Stevens, Executive Secretary of the IAFC, was appointed as Chairman of the Fire Prevention Committee, which features some of the outstanding men of the nation.

This commendable campaign can be most effective in creating year-round fire prevention in local communities. It is necessary, however, that all fire departments should take advantage of the opportunity for cooperative effort and follow the program that has been outlined in making inspections and contacting the organizations and individuals who in turn can help to increase the effectiveness of fire prevention.

Important Series on Pumper Operations

Many readers of FIREMEN will be interested to know that an important series on pumper operation and maintenance will continue in future issues of the magazine. The first of the series "Maintaining Pumpers" by Robert C. Byrus, appeared on page 20 of the June issue of FIREMEN. In this edition, a continuation of this article may be found on page 13. Succeeding issues of the magazine will contain more of this important subject.

Chief Just Retires

Chief James W. Just, Vice Chairman of the NFPA Committee on Firemen's Training for many years, has retired as director of the Fire Service Extension at the University of Maryland, College Park, and has returned to his native state of Michigan. Chief Just is well known throughout the nation as a pioneer in the development of state-wide firemen training and under his leadership the Maryland Firemen's Training Program has enjoyed national prominence.

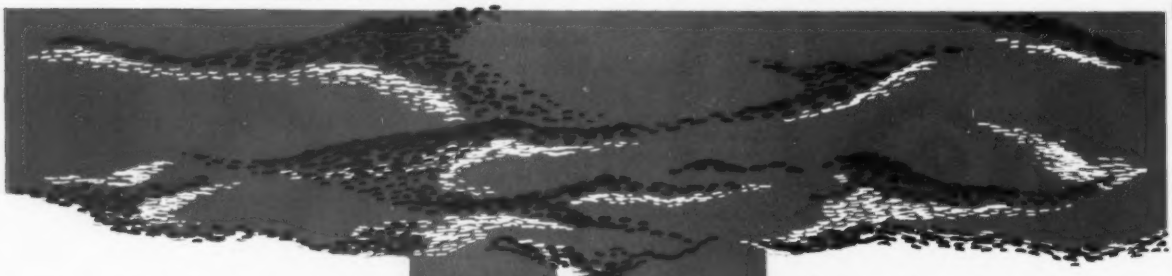
The fire fighters of Maryland have been extremely fortunate to have secured another outstanding firemen trainer to fill the post vacated by Chief Just. Robert C. Byrus, also a member of the NFPA Committee on Firemen's Training and Fire Protection Engineer in charge of fire training for Iowa State College, has been appointed by President H. C. Byrd of the University of Maryland to serve as director of an expanded firemen's training program. Chief Byrus has had a distinguished record as a fire officer in the State of Florida, as a Fire Protection Engineer with the U. S. Army, and as a Director of Firemen's Training for more tha 800 fire departments reached by the Iowa training program. He is especially noted as a sympathetic and enthusiastic friend of the volunteer fire service.

REMINDER!

From the Fire Prevention Program of the International Association of Fire Chiefs — "July is Rural Fire Prevention Month! Every home in the rural district should be contacted directly or indirectly through the Grange or other farm organizations. Give the forestry men and county chiefs a hand. Rotary club month."

PROTECTION AGAINST LIGHTNING.

By Emmett T. Cox, Field Officer, Fire Prevention Department, Western Actuarial Bureau
Member of NFPA Committees on Farm Fire Protection and Firemen's Training



From NFPA Standard No. 78 — Code for Protection Against Lightning (Fifty Cents)
"The number of fatalities from lightning is shown by Census Bureau reports to be about 400 per year for the entire United States. From the ratio of deaths to injuries where both are known, the number injured is estimated at 1000 per year. The same report shows that approximately nine-tenths of these casualties occur in rural districts, which, for census purposes, include all towns and villages having 2500 inhabitants or less. The lightning hazard is greatest among persons whose occupations keep them outdoors, a conclusion which is supported by the general run of reports of such casualties.

"Data on property losses from lightning are incomplete. Reports of the National Board of Fire Underwriters show losses averaging more than $9,000,000 annually, but this sum does not represent the total loss. Many mutual fire insurance companies pay lightning losses which are not reported as such for tabulation, and there are some losses not covered by insurance. It is consequently probable that the total loss amounts to double the above value." *(NFPA statistics indicate lightning losses amount to about $25,000,000 annually. — Ed.)*

WHEN moisture is evaporated from the earth in invisible globules, the sun's rays have the power directly or indirectly to give these globules a potential energy different from that of the earth. After these globules ascend a mile or two, a cold wave condenses them into rain drops and sets free this potential energy in the form of electricity on the surface of the rain drops. When a few trillion rain drops have condensed to form a square mile of cloud and combine their electric energy, the conditions are getting ready for a lightning flash.

When an electrical strain is placed in a cloud the earth directly beneath is affected in sympathy and takes on an opposite electrical strain. Air normally resists the discharge until there is sufficient electrical potential to overcome this resistance. When that condition has been attained, the discharge is ready to break through the path that offers the least resistance.

As two charges of electricity from cloud and earth rush into contact there is a terrific explosion at that point. The discharge is initiated by a leader stroke travelling from a cloud. However, a second stroke, more intense and illuminated, is built up from the earth. It is not definite that the charges from the cloud are always negative and those from the earth positive. It is conclusive that each is composed of an opposite charge because of the scientific fact that opposites attract.

Areas of Danger

THE most dangerous places in a house during an electrical storm are: near a stove, near a chimney, under drain pipes, between or near metals of large size, and in the cellar near the walls. Also to be avoided is the close proximity to electric light circuits, lightning conductors and down spouts, screen doors and windows, stoves and fireplaces, telephones and any metal objects that project through roofs or walls. The safest place in a house during a storm will vary somewhat with the construction.

To be avoided outside are small sheds and shelters (if in an exposed location), isolated trees, wire fences, hill tops and wide open spaces.

Railway trains, or anything within them, steel structural buildings, steel wind mill towers and modern automobiles are practically immune from lightning damage. Other safe places are large metal or metal frame buildings, dwellings or other buildings protected by lightning rods. Large and small unprotected buildings are less desirable but provide cover.

Protection Equipment

LIGHTNING protection equipment may be divided into four groups: air terminals, conductors or rods, fasteners, and ground connections.

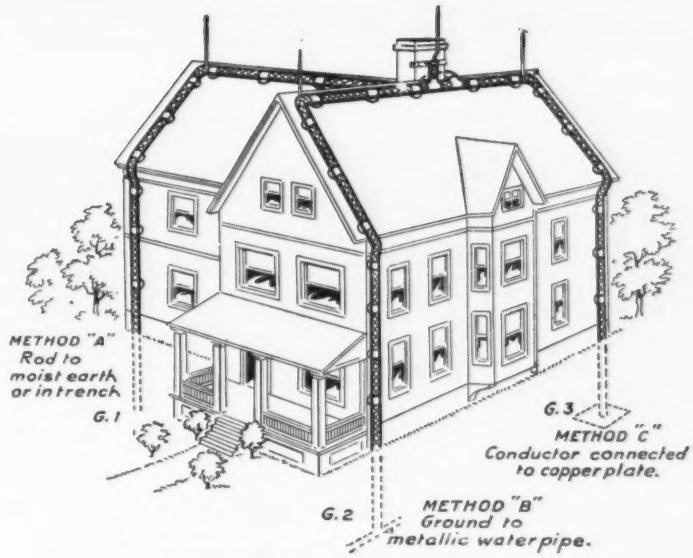
Air terminals consist of three parts; the point, the elevation rod, and the support. There exists a variety of these terminals but three

of the accepted types are: multiple point air terminals, providing the individual points are heavy; single bayonet points; and copper tube or shell points, which should have a wall thickness of 0.032 inches. The sharp end should be made about three inches of solid material.

Each upward projecting part of a building such as chimneys, peaks, gables, ventilators, ridges, and dormers, should be protected by an air terminal. These terminals should not be less than 10 inches and not more than 5 feet tall.

When terminals are from 24 to 60 inches tall they should be spaced not over 25 feet apart along roof ridges or the edges of flat roofs. Shorter terminals should be spaced not over 20 feet apart. A good joint must also be made where the elevation rod joins the roof conductor.

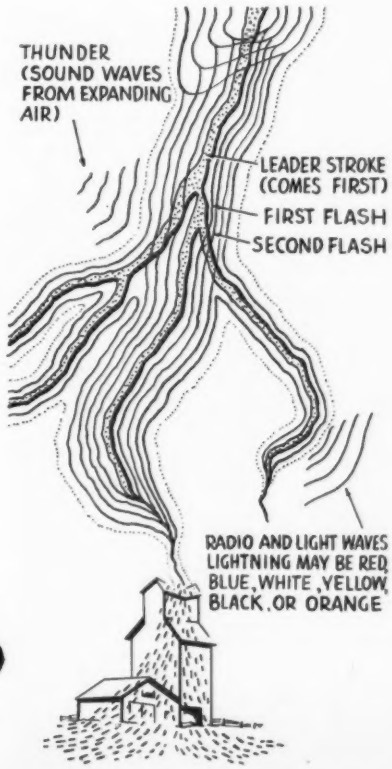
It is important to have adequate grounds at the perimeter of the protected property as shown in the drawing.



Typical Installation on a Large Dwelling

Conductors or Rods

AS far as possible conductors over a building should form an enclosing net work. Conductors should be coursed along the ridge to the ground at opposite corners, or at all corners, with changes in direction made in curves of large radius.


THUNDER (SOUND WAVES FROM EXPANDING AIR)
LEADER STROKE (COMES FIRST)
FIRST FLASH
SECOND FLASH
RADIO AND LIGHT WAVES LIGHTNING MAY BE RED, BLUE, WHITE, YELLOW, BLACK, OR ORANGE

They should follow a horizontal or downward course as far as possible. Great care should be taken to see that joints in conductors be made so that they will not work loose. Solder may be used to keep joints from corroding but should not be depended upon for conductive continuity or mechanical strength.

Fasteners should be spaced not over 4 feet apart. If they are of the same material as the conductors they need not be fitted with insulators. Their purpose is to hold the conductor firmly in place and make a neat durable job.

Ground Connections

Ground connections are that part of the system which forms the electrical path between the down conductor and the earth. For proper grounding be sure that the ground rod or plate is in contact with permanently moist earth; that the area of contact is sufficient; that the connection between the ground plate, or grid, and the down conductor is thorough and permanent; that it has low resistance to electrical currents; and that the metal used in the ground will resist corrosion. Ground connections usually consist of metal rods driven into the earth to permanent moisture, never less than 10 feet deep. If bed rock lies close to the surface more area of contact with the soil is required. A copper plate may be buried or a grid consisting of several strands of cable laid in a wide trench extending away from the building. All ground connections should be made to this cable.

Metal Roofs

A METAL roof has little or no effect on whether lightning may strike a building. If the metal is effectively grounded and pointed it will help to protect the building, but no one can tell just how much. It is to be remembered that individual sheets of roofing material are seldom bonded together. In this case the discharge may jump from the roof to other conductors which offer less resistance. Aluminum is a good conductor, but, as with other metals the separate sheets may not be in good electrical contact. If a metal roofed or metal clad building is rodded, be sure to bond the metal to the rodding. If a building is both metal-roofed and metal-clad, the roof and siding should be bonded together at several points along the eaves.

Water Pipes

A METAL water pipe extending out from a building 25 feet or more to a spring, well, or public water service mains may be rated as the best grounding for a structure. Where water pipes extend into a structure it is important that the lightning conductor system shall be interconnected with the water pipe system.

(*Please turn to page 21*)

Problems of Fire Defense

By Kyle P. Laughlin
Director, Fire Services Division, U. S. Civil Defense Administration.

IN any study of the problem of minimizing fire effects the first step should be to analyze the vulnerability of our cities. In one city, or area of a city, fire storms or uncontrollable conflagrations are probable; in other communities or areas, the fire effects would take the form of innumerable individual fires and the probability of their coalescing into one great fire would be fairly remote.

What is the pattern of city structures revealed by an analysis of American cities? At the business center the blocks are almost solidly occupied by business structures. This area of intensive utilization of the ground area is succeeded by blocks that resemble hollow squares; the street frontages are lined with buildings, but there are vacant backyards or interior courts. As one goes further out, rows of detached houses appear with yard space on the side and rear. On the periphery of the settled area the blocks are only partially developed with houses. Many blocks are entirely vacant.

Cities frequently have a star-shaped appearance from the air, with bands of houses strung out along principal highways leading from the center of the city. Beyond the main body of the city are often found satellite communities or suburbs, each separated from the central area by stretches of vacant land.

As a first step in the analysis of the structure of a city, the configuration or shape of the urban community must be examined. It will be seen that the hundreds of thousands of separate buildings form various types of patterns around central business areas like a scattering of iron filings about a magnetic core. The boundaries, the sizes, and the shapes of entire urban communities will be clearly defined by this step. The inner compositions of urban areas will not, however, be revealed.

Among the many factors which together determine vulnerability, two primary factors stand out; building density, or the ratio of roof area to ground area, and the combustibility of structures.

From a study of wartime fires in air-bombed cities, it has been concluded that a density of under 20 percent will not support fire storms and a density above 20 percent will, as it did in the great attacks on German cities where fire storms occurred.

A study of National Board Reports on conflagration areas in American cities demonstrates that most of these critical portions of the cities have a density of 40 percent or over, while vast areas in the remainder of the city lie between the 20 to 40 percent range.

The report "Fire Effects of Bombing Attacks" divides city structures into three classifications: (1) All-frame construction; (2) masonry with combustible material in their principal structural members, such as roofs and floors; (3) fire resistive, constructed of materials that will not support combustion and which will withstand all but the most intense fire without serious damage.

Noncombustible buildings constructed of materials that will not support combustion but which are vulnerable to damage by intense heat, such as unprotected steel, framed structures, with noncombustible coverings, were not included in these classifications. They were found in appreciable numbers only in manufacturing installations and their influence on the over-all assessment of a city area would not be significant.

Less than 4 percent of the buildings in any city in this country are built of fire-resistive construction. However, these tend to be clustered in specific areas, such as high-value commercial districts. On a ground area basis the percentage for fire resistive construction would increase materially, but even then it would be low.

The use in American cities of continuous cornices, porches, fences and frame additions to masonry buildings has been common and all-wood construction has been prevalent because lumber has been plentiful. The conclusion is inescapable — that we in this country are more susceptible to fire storms than the cities of Germany where fire storms actually occurred in World War II.

THE problem of vulnerability of individual communities in this country calls for a detailed study of each individual community. The identification of hazardous areas in advance is a civil defense measure demanded by the emergency of today. It will suggest location of shelters, relocation of fire stations, dispersal of fire companies and equipment, evacuation procedures and, in a long term program, measures to reduce or eventually eliminate fire storm or conflagration hazards as they now exist.

In any plan for fighting wartime fires the problem of water supplies must be of prime consideration. One of the major problems learned in fighting fires in World War II is that in bombed cities you cannot have too much water. In the great attacks on Germany and Japanese cities, damage if not complete destruction of water supplies was experienced. While this country has the best water systems in the world, there is every reason to believe that damage caused by bombing would make a supply insufficient for the demand.

No two distribution systems are alike so emergency plans adopted in various cities will differ. Local civil defense officials should study their individual communities and make such plans as would be most suitable. Auxiliary sources of water should be mapped out

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This article is from an address before the 55th Annual Meeting of the National Fire Protection Association at Detroit, May 10, 1951. Mr. Laughlin, a fire protection engineer, is particularly qualified to direct the fire activities of the U. S. Civil Defense Administration by reason of having spent several years just before taking up those responsibilities in a study of fire destruction in industrial plants and cities during World War II. He was the principal author of the very helpful U. S. Government pamphlet, "Fire Effects of Bombing Attacks" (U. S. Superintendent of Documents, Washington, D. C., November 1950. 48 pages. Fifteen cents.)

and prepared for use. If natural sources of water are available, auxiliary supplies should be obtained from these sources. If good natural sources are not available, then substitute measures should be designed to augment present supplies either on a temporary or permanent basis.

To provide an adequate water supply, cities should plan the maintenance in service of as much of the public water supply system as possible. Primarily, this is the responsibility of the water and health departments. Also to be considered is the utilization of auxiliary water supplies separate from the public water supply systems which are available or which must be developed. This should be a function to be assumed by the fire departments.

Long hose lines generally will be necessary in the utilization of auxiliary water supplies. The friction losses will be high and will restrict the quantities available. Light weight metal pipe with special slip-joints may be used to advantage in some cases being laid on the ground surface. Skid mounted or other emergency pumping equipment may be used for these temporary lines. Too much dependence, however, should not be placed on relaying water from long distances. More reliable sources for emergency water will be those which are stored reasonably near the fire.

THE problems of operation of fire department companies will include various methods not utilized in ordinary peacetime fire fighting. One of these methods will be the redistribution and relocation of fire company locations which will place fire companies at selected points in outlying areas around the congested city center. (See FIREMEN, June 1951 — Ed.)

This is necessary to reduce the possibility of destruction of fire companies to a minimum and at the same time provide adequate protection against normal fires or those started by saboteurs. Any development of fire company forces should make due consideration for the vulnerability of the city areas, the availability of transportation facilities, and the topography of the city.

No city in itself will be expected to have enough equipment available to fight all the fires caused by wartime attacks. This problem will be partially met by mutual aid and mobile support. Mutual aid is the exchange of assistance among communities for civil defense operations in critical areas during an emergency based upon prearranged planning and authorized by voluntary contactual agreements between communities. Mobile support is aid directed by state authority into a stricken area regardless of mutual aid agreements and, therefore, can be considered an extension of the mutual aid system under the direction of state civil defense authorities.

The problem of augmenting the present fire fighting equipment in critical areas is to be met by the study of the individual cities giving due consideration to their criticality. This study will demonstrate the availability of assistance from mutual aid and mobile support and the availability of water supplies to supply such additional support. Inventory forms are now being prepared by the Federal Civil Defense Administration which will provide basic information on which to assign additional equipment when acquired.

The nature of wartime fires demonstrates that the organized fire departments will be completely engaged in trying to contain the great mass fires. Whether fire storms and conflagrations will occur beyond the areas of complete destruction will be determined by the fire vulnerability of those areas. As to whether the atomic bomb will be as likely to cause fire storms as the incendiary bombs in World War II, we have no complete answer for. The point we can be sure of is this — there will be great fires which will more than tax the capacity of the organized fire departments no matter how augmented.

THE innumerable individual fires which will occur out around the perimeter of damage must be fought by the civilian population either organized as fire guards in industrial plants and large buildings or as fire wardens working within the warden division or as individual householders. The problem of controlling these individual fires may be the greatest potential problem of all. It may be the one most capable of solution if we have a thorough and complete program of education in fire hazards in this country, if we have an adequate course of instruction in basic methods of hand fire fighting, and if we have the will and determination instilled in the people of this country.

To paraphrase the speech of Millard Caldwell, U. S. Federal Civil Defense Administrator, at the opening of the Staff College Conference Course in Washington on Monday, April 30: "Recognition of these facts must come quickly. That recognition must be universal on the part of the people of this country wherever they live and whoever they are. That recognition of the value of civil defense must be by the press, the radio and all our communications media. That recognition must hit home in the minds of all those throughout the nation who are responsible, either in an executive or legislative capacity, for the safety of our people."

The people of this country must know that they are more likely to lose their home by fire after the attack than by explosion during the attack. The chances that any specific neighborhood would suffer a direct hit are small. But wartime bombing, whether by atomic attack or by incendiary weapons, would start innumerable small fires. These small fires quickly would grow into one big fire unless put out at once.

It must be brought home to the people with the greatest force possible that small fires can be extinguished with the simplest fire fighting tools. The few basic rules which apply to every fire must be imparted in a national campaign of education and instruction.

In England during the last war, there were cases where bombs started fires in every single house on a whole street and yet every house was saved. In one British town, 150 small fires were started by bombs within a few minutes. Only two of these small fires grew into big fires that had to be handled by the regular fire fighting services. Very often in the last war civilians who knew how to fight fires were able to save their own homes against great odds. People must be taught also that fire hazards in peacetime become doubly dangerous in wartime. The obvious little things that have been neglected must be done and the doing calls for education.

Current Problems of the Fire Service

From an address given at the 55th NFPA Annual Meeting by John H. Alderson, Chief Engineer, Department of Fire, Los Angeles. Chief Alderson is a member of the NFPA Board of Directors, and of the NFPA Committees on Civil Fire Defense, Fire Department Equipment, and Flammable Liquids Field Service.

FROM 1941 until the collapse of Japan and Germany there was very little opportunity for fire departments to improve themselves and to grow with the growth of the country. It is true that there were a few priorities granted during the war for the construction of fire stations and for the purchase of apparatus, but not very many. Consequently, at the end of the war practically every department found itself with a backlog of needed improvements in stations, manpower, and apparatus.

The effect was not altogether bad because during the war, with the threat of potential attack on some of the cities, many public officials and many citizens gave more thought to the fire service than had been given before.

We were in an ideal situation at the end of the war to begin to get those things which we had needed. There have been more fire stations built in the past five years in the United States than during any other five years in history. There has been more fire apparatus ordered and delivered to municipal fire departments during the past five years than during any other five years in history, and yet that has barely taken up the backlog.

The average piece of fire apparatus in service in this country today is just about as old as it was ten years ago, in spite of the tremendous sales and deliveries made in the past five years.

WE now find ourselves entering into another war — apparently we are in a war. Call it "police action" or whatever you may want; I call it war.

We are now coming again under wartime controls and it is beginning to affect the expansion of the fire service, in a number of ways. First of all, critical materials have been placed under control. Secondly, the inflation has caused the cost of building and the cost of the purchase of apparatus to go up so much that the taxpayers are beginning to look critically on improvements, and mayors' councils are beginning to say, "Let's wait a while." I know because we have a building program in my own city and within the past year the cost of the same building has increased about 48 per cent.

The controls and the inflation, in my opinion, are going to stop the improvement of fire departments, generally speaking, nationwide, from the standpoint of the purchase of fire apparatus. That, I think, is one of the most important problems which now faces the fire service.

There is another problem which may be more important than either one of those. I think it is more difficult to deal with, and that is the question of the men who man fire departments. During the war, the last war, most departments encountered a great shortage of manpower. Various systems were set up to meet that. Some departments worked overtime. Some paid extra time for voluntary work. Many of us tightened our belts and did the best we could, and through the cooperation of the public got by fairly well.

At the end of the war there was a tremendous pool of good manpower. There was no difficulty in employing competent firemen, physically able, young, alert men returning from the military service, men who were trained and disciplined and anxious to find security and to find a niche in life and to marry and have a family. Consequently, most departments filled themselves up with a very fine grade of men.

Now something is changing, because that situation no longer exists. The average ex-serviceman out of World War II has either passed the age when he would be entered or he has found his niche somewhere else. The young manpower of the country is being drained off by the military. We have just recently conducted an examination in my city for firemen, and we pay about the going wage. Our conditions are about the average in the larger cities, and of the top 115 men who passed the written examination 91 failed to pass the medical examination. Out of the first 115 men, we had 24 acceptable applicants. The number of applicants for the positions was the lowest we have ever had in modern time. Out of the entire list it does not appear now we will be able to secure more than one full class of men to send through our training period. That, I think, poses a very definite problem for the fire service.

ALONG with manpower there is this. I am going to be severely criticized for what I am going to say. There is also this problem, and it is tied up with the social changes that are taking place. It appears to be popular now for most of us to wish to serve as little as possible for as much as possible. It has become quite common for firemen to band together to demand shorter work weeks. Now, I am for that. I am for anything which is right and just for the working men of this country and, after all, firemen are simply a part of our society and are working men, but I say to you — and I am a fireman — there is something morally wrong when a man insists on working a 24-hour shift, not working too hard, opposing any additional duties which may be placed upon him, being given the privilege of sleeping ten of the twenty-four hours, and then demanding a rest period of forty-eight hours to recover from the onerous duties! There is something morally wrong with that man, and the condition is spreading throughout the fire service.

In my opinion it is probably the greatest problem with which we are faced. Now the fire service, of course, is not the only service or type of employment in the country where you find that psychology, but it is present in the fire service and it is not healthy.

That leads me to another problem, and that is this problem of political influence in the fire service. One leads naturally to the other. We have just seen an example where, in one of our largest cities, allegations have been made that men contributed money to purchase special privileges from the city administration, to the shame of the men and their superiors.

Who is to blame for that? Well, maybe the firemen are selfish and self-centered. Maybe the politicians want to remain in office. Maybe they have a desire for personal gain. But in the final analysis, you are the people who are to blame for that. The citizens are to blame if it occurs in your town, no matter how small or how large. It is the responsibility of the people who live in that city and do not go to the polls. Elections are not won and bad governments are not placed in office by those who vote; they are placed in office by those who do not. Don't criticize the fire service. Don't blame the fireman. Don't criticize the politician. If you live in a city where that raises its head, and you shouldn't wait until it raises its head, but if you have voted and done everything within your circle of influence to either prevent or correct that, then criticize.

What other problems do we have? There is the headache of all of us, civil defense.

By and large, my observation is that the average city is trying to do what it can within its resources to build a civil defense organization. My observation is that most state governments are doing a good job. My observation is that the leadership in Washington has fallen down and has failed to provide the leadership necessary to carry through. In my opinion it is no more the responsibility of the City of Los Angeles or the City of New York or the City of Detroit or any town or city in this country to underwrite to any material extent a civil defense program than it is their responsibility to buy artillery and airplanes to defend their city from attack.

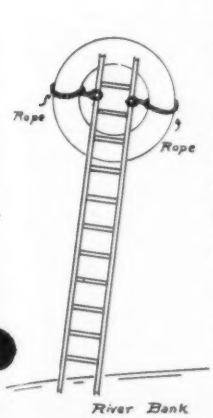
In my opinion if we were to believe what was told in the press a few days ago, the direct quotation being, "The world may explode in the next 6 months," then I say the leadership in Washington has failed us. That is a definite problem of the fire service, because in most communities the fire service is looked upon as the nucleus of defense. What can the fire chief do when he has no leadership or money or idea of what the problem is, when he is not told whether his city is number one or two as a primary military target? I am simply speaking my mind on this.

Now I do think there are some things the fire chief can do to meet all of these problems. Perhaps we have not utilized our manpower as effectively as we might. We recently made thousands of contacts in the City of Los Angeles by the use of on-duty firemen using their own apparatus, keeping in touch by radio, and in a period of three weeks we did not lose a fire. We can intensify our fire prevention and public education work. Apparently there is going to be no help from Washington as far as what will happen to our cities in the event of enemy attack. We as fire chiefs can try to prepare those cities so the results of such an attack will be as slight as possible. We can try to remove those things which will burn quickly and hope and trust and pray to God that the results will not be too bad if the "world does explode" in the next six months.

The International Association of Fire Chiefs has organized a Fire Prevention Public Education Committee. I have been interested in the public support we have received from this campaign from public sources and the people who have been willing to lend their names to that committee and to pledge themselves to do what they can in their field to help the fire chief do a better job in his own community in fire prevention and public education. Here are just a few of the names: Honorable Herbert Hoover, only living ex-President of the United States; His Eminence, Francis Cardinal Spellman; the President of the National Council of Christians and Jews; the President of the American Municipal Association with 9,000 cities as members, the President of the Girl Scouts; the President of the American Federation of Labor; the President of the C.I.O.; the President of the Chamber of Commerce of the United States and the President of the Junior Chamber of Commerce; and the National Commander of the American Legion.

We are just beginning, but we are starting to meet some of these problems, and I am pledging to you we are going to do a better job. The average fire chief is going to do a better job in his own community with the help we are getting in the field of fire prevention and public education than we have ever done before. We hope it will be bigger next year and the year after that, but I can assure you of this: We have started. We will not turn back.

Rescue Hint



Dear Sirs:

We of the Rolette Fire Dept. have just joined your forces but we would like to make one comment on your picture on the cover of the March issue. If Private Thibault had taken a tractor inner tube or truck inner tube and tied it to his ladder, two men could have walked out on the ladder even though it broke through the ice. The tubes are available at all tire shops for $4 or $5, second hand, and could be kept inflated for just such an emergency.

James Darling, *Chief*
Rolette Fire Dept.
Rolette, North Dakota

Fire Resistance of Timber Doors

PART IV, Fire Resistance of Timber Doors (1951), Investigation of Building Fires, published recently by the Department of Scientific and Industrial Research (Building Research Station), in England is an important contribution to an understanding of the fire resistance of various types of ordinary wood doors used in residential properties.

The report shows how substantial improvement in the fire resistance of existing light wood doors can be obtained. The tests reported indicate that except for teak of 2-inch thickness, there is little significant difference in the comparative fire resistance of hardwood doors, softwood doors, and softwood doors impregnated with ammonium phosphate.

The report may be obtained from His Majesty's Stationery Office, London, price 1 Shilling (Net) or the British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. Price, 30 cents.

New NFPA Standards

Here are some of the new standards resulting from technical committee action at the 55th Annual Meeting of the NFPA. All of these are printed in the NFPA Pocket Size, 4¾ x 7¼ in., and may be obtained by writing to the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts.

No. 11 — Foam Extinguishing Systems

Prepared by the Committee on Foam with concurrence of the General Committee on Special Extinguishing Methods. 64 pages, illustrated. Revised from 1950 edition. **Fifty cents.**

No. 13 — Automatic Sprinklers

Prepared by the Committee on Automatic Sprinklers. 112 pages, illustrated. A complete new edition incorporating former appendix material. **Fifty cents.**

No. 13A — Care and Maintenance of Sprinkler Systems

Prepared by the Committee on Automatic Sprinklers. 16 pages. Revision of the 1940 edition. **Twenty-five cents.**

No. 18 — Wetting Agents

Prepared by the Committee on Wetting Agents with concurrence of the General Committee on Special Extinguishing Methods. 16 pages, illustrated. Tentative edition now finally adopted with revisions. **Twenty-five cents.**

No. 19 Motor Fire Apparatus Specifications

Prepared by the Committee on Fire Department Equipment. Forty pages, pocket size edition. Extensive revision from the 1950 edition including a new section on water tank fire apparatus. Also separately published in 8 x 11 in. contract form at $1.00. Pocket size edition will be sent unless contract form is specified. **Fifty cents.**

No. 192 — Volunteer Fire Departments

48 pages, illustrated. Section I of this standard, prepared by the Committee on Fire Department Equipment, is a complete revision of the 1947 edition. No changes in Sections II, III, and IV, prepared by the Committee on Farm Fire Protection, from the 1947 edition. a new appendix is included in the pamphlet on specifications for rural pumper and water tank fire apparatus. **Fifty cents.**

No. 20 — Fire Pumps

Prepared by the Committee on Fire Pumps. 64 pages, illustrated. Revised from 1948 edition. **Fifty cents.**

Choosing Pumper Layouts

by Warren Y. Kimball

THREE factors influence the choice of the pumper layout or operation to be employed at a given fire: 1. The volume of water needed, and available. 2. The time that will be required to obtain effective streams. 3. The best utilization of available water, hose, and pumping capacity.

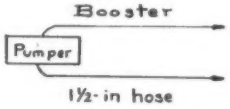
The man in command when the layout is selected must balance one factor against another. The 150 or more gallons in the booster tank may put out a fire that could not be put out by 200 or more gpm some 5 minutes later when perhaps 1000 ft. of hose has been laid to static water sources and hard suction connected. However, because of limitation of tank supplies it is necessary to be prepared to back up booster tanks with other supplies which may include: hose line from a hydrant; line from another pump taking suction; line from portable pump at static water source; water carried in milk cans and other sources.

The decision of the layout to be employed may vary as to whether only one piece of apparatus is available at the time or whether additional men and apparatus are quickly available.

As far as the pump operator is concerned the choice of hose layouts can be simplified into three general types of pumper operation: 1. Supplying lines from tank at the fire (booster or 1½-in. hose). 2. Pump supplied by water under pressure through hose (long or short, hard or soft suction). 3. Pump supplied by drafting water through hard suction.

Sometimes combination operations are employed as when lines are initially supplied from the tank until a line from a more adequate water supply is in service.

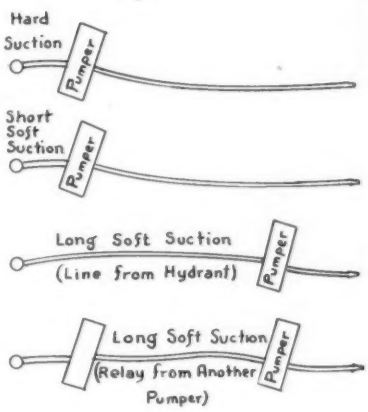
I TANK OPERATION



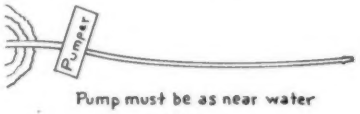
With tank operation it is desirable to have the pump located as close to the fire as is safe and convenient.

With the pump supplied under pressure it is possible to locate the pump either close to the fire or close

II PUMP SUPPLIED BY WATER UNDER PRESSURE (Positive Pressure on Incoming Gage).



III DRAFTING FROM STATIC SOURCES. (Vacuum on Incoming Gage)



Pump must be as near water as possible

to the source of water. A limiting factor is the ability of the supply source to maintain a positive pressure at the pump intake with the desired flow.

When taking suction from static sources it is essential that the pump be as near to the water as practicable and that the lift be kept at a minimum.

The group of fire department instructors preparing "A Guide for the Training of Pump Operators" suggest the following steps in operating pumpers once the layout has been selected and the pumper set for operation:

A. Putting Pump in Service

B. Getting Water

C. Charging Hose Lines

D. Maintaining Pressure

E. Operating Pump Smoothly

F. Shutting Down

These subjects have been broken down into operating steps and will be discussed in future issues of FIREMEN.

Operating Pumpers

For several years the NFPA Committee on Firemen's Training has had a subcommittee headed by Robert C. Byrus of the Iowa Fire Training Program at work preparing "A Guide for the Training of Pump Operators." While considerable work remains to be done before a complete pump operator's manual can be issued, the committee has completed the part of the manual dealing with the actual steps to be taken under the heading "Operating a Pump."

This material was developed at a conference held at St. Joseph, Missouri, last Fall with the following group participating:

Robert C. Byrus, Iowa State College
Joseph I. Fetters, Nebraska Department of Education
Keith Royer, University of Kansas
Bush Walden, University of Missouri
Emmett T. Cox, Western Actuarial Bureau
Warren Y. Kimball, NFPA FIREMEN Magazine

OPERATING a fire department pumper is a serious responsibility. Failure on the part of the pump operator to adjust his pump to meet required circumstances can result in:

A. Endangering the safety of fellow firemen

B. Making control of the fire more difficult

C. Permitting the fire to reach more destructive proportions

D. Costly repairs to fire apparatus

Modern fire apparatus as supplied by reputable manufacturers or assemblers is usually engineered to perform services that were not required of older apparatus. Getting best performance from a fire truck motor and pump requires a thorough grasp of the principles of pumping, plus knowledge of the sequence in which the principles are applied to any specific pumper. More flexible pump operation has made it necessary to install additional pump and motor control devices. Unfortunately the presence of these controls has contributed to the confusion of many pump operators. Information as to where the controls to do this job are located on any one make or model pumper must be obtained from a manufacturer's instruction manual delivered with that pumper.

Putting Pump in Service

GENERAL — When the pumper has been located on the fireground to greatest advantage the next step is to start the pump operating. Speed of action is essential during fire fighting. Every effort should be made to analyze the pump control locations and their functioning under varying circumstances so the pump operators can do each job in its proper sequence with little lost motion. In general, the following suggestions and precautions may be followed:

1. Pump operators should glance at the oil pressure, motor temperature, gasoline supply, ammeter, tachometer and all other gauges before leaving the seat. The information they disclose could be an important factor in the following steps.
2. Check the emergency brake to be sure it is applied and will hold the pumper against any movement.
3. Always engage pump gears without clashing or using force. Gears may be assisted to mesh by alternately engaging and disengaging the clutch. The knack of doing this job may be obtained with repeated experience gained during practice pumping sessions.
4. Be positive that the transmission shift lever is in the proper position, usually in direct drive. On some makes of pumpers the lever must be in fourth gear (Do not confuse this position with second or reverse.) Repeated practice sessions will give pump operators an instinctive sense of "feel" when the pump is properly engaged. This can be determined by the sound, or by the comparison of pressure produced to the motor revolutions and by the tachometer indicating motor speed. Where a lock is provided it should be used.
5. Set throttle for a fast idle so the motor won't stall.
6. The pump shift mechanism should be engaged and disengaged only when the motor is idling.

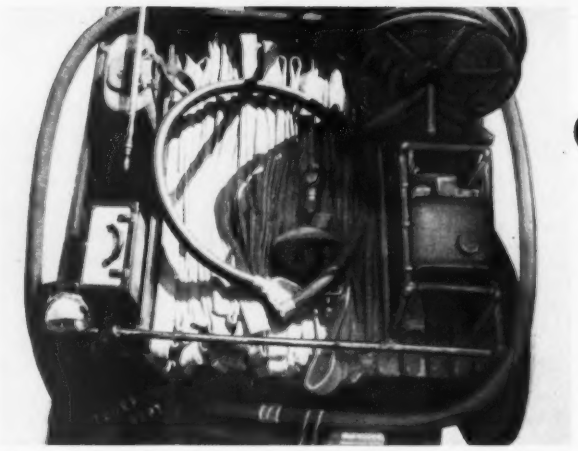
FOR TANK OPERATION — Of those fires requiring water for extinguishment the majority will be controlled with the water contained in the booster tank. A big advantage in carrying a supply of water on a pumper is the speed with which the water can be applied to a fire.

Modern developments are toward larger booster tanks and more efficient use of water through fog nozzles. Some city fire departments immediately attack the fire with small preconnected lines from one pumper on the theory that the fire may be controlled and spread halted while other pumpers are laying larger lines. Fire trucks designed for rural use may be equipped with a larger booster tank supplying two booster hose reels and preconnected 1½-in. hose lines of desired length. At least in areas where hydrant streams are not available, one-inch booster hose should be the smallest size used. If pump controls are operated from the seat they should be engaged before stepping out of the cab. This can be safely done for booster operation because the pump will not run dry for a long period of time.

FOR HYDRANT OPERATION — The operation of connecting to a hydrant will vary because of many factors, the amount of water available at the hydrant, the number and size hose lines desired, and the capacity of the pump. These will determine whether hard or soft suction hose will be used. If a soft suction hose is used the evolution is speeded up if one end is carried preconnected to a pump intake. The same advantage may be obtained by using a "squirrel tail" hard suction. In case either of these practices are used there should be a valve in the suction line, or a cap put over the end of the suction hose so the pump can use the water from the booster tank without filling the suction hose. Whether the pump is engaged before or after connecting to the hydrant will depend on individual circumstances.

FOR DRAFTING — When the water supply is an open source such as a lake, river, pond, cistern, canal, or other similar body of water it will be necessary to use the hard suction hose. Connecting this large heavy hose to the pump intake and attaching the strainer and rope will usually take a little time. Where suction at draft is common, it may be desirable to carry the strainer attached to the suction hose. It might be well to make the needed connections before the pump is put in gear. The correct procedure for any individual pumper can be determined by study of all the factors involved and by practice drills.

A 2-in. hard suction hose encircles the hose bed of the jeep as shown in this rear view. 700 feet of 1½ in. hose is carried. On the right side of the jeep is the portable pump.



Top view of the jeep shows the hose bed. The short section of hard suction hose is for the portable pump. Also carried are "Indian" back-carrying pumps, and an Acme all-purpose mask.

Jeep Used for Brush Fires in Kittitas County, Washington

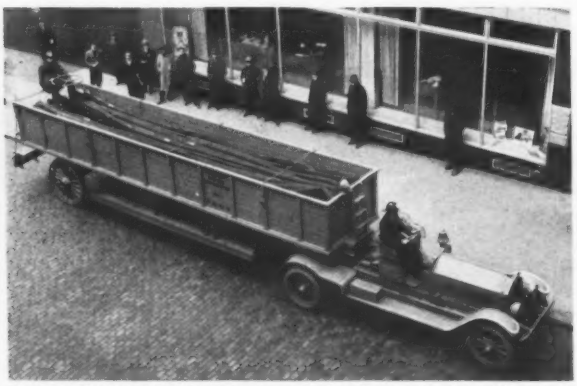
FIRE fighting in rural areas sometimes presents situations where the heavy apparatus of a department can be of little use. Rough terrain, distant water supplies, and heavy brush pose problems of maneuverability which may have a great influence on the effectiveness of fire combat. In anticipation of these particular situations, the Kittitas Fire Protection District No. 1, Thorp, Washington, has equipped a jeep for use in areas that are generally inaccessible to their pumper, with reportedly excellent results. This department, which recently became a member of the NFPA, has a total membership of 19 active fire fighters headed by Chief Don Billingsley and Assistant Chief Earl Vande Brake and protects small town and rural areas.

Shown on this page are pictures of the vehicle. It has a 150 gpm Edwards rotary pump with a Ross relief valve, a 100 gallon booster tank to supply 150 feet of ¾-in. hose with a Hardie nozzle, a Pacific Type Y portable pump, and carries 800 feet of 1½-in. hose. The wheelbase of the vehicle was lengthened 30 inches.

The department also possesses a Seagrave 500 gpm pump on a Ford chassis with a 350 gallon booster tank. This piece of apparatus carries 800 feet of 2½-in. hose and 900 feet of 1½-in. hose, with 200 feet of 1-in. hose for the booster tank. A 20-foot ladder and a roof ladder are also carried.

Members attend the fire school arranged by the Vocational Education Department of Washington. Instruction is under the direction of Captain Cook of the Seattle Fire Department.

Fog nozzles have been effective in fighting brush fires reports Chief Billingsley who is shown here using the booster line while fire fighters Hatfield and Lyons look on.



Courtesy WNYF, Official Publication of the Fire Dept. of the City of New York

Relay Hose Tenders

(*Left*) In World War II, the Fire Department of New York City converted five old ladder trucks as "relay hose tenders," each equipped with 60 sections (3000 feet) of 3½-in. hose. While never used except in defense exercises these hose tenders were available on call from the Chief of Department or an assistant chief. Hose gates and other fittings were carried to supply 3 lines of 2½-in. hose from each 3½-in. line. The large hose could be supplied from fire boats, could be used in pumper relays, or could be employed to bridge broken water mains. With 500 gpm flowing, friction loss in 3½-in. fire hose is 95 pounds per thousand feet. With 750 gpm the friction loss would be approximately 200 pounds per thousand feet.

Realism in Training

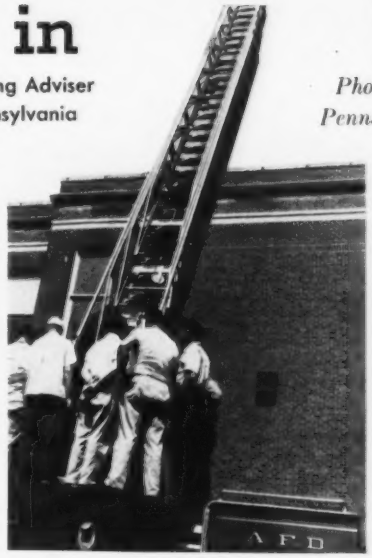
By Edgar A. Spotz, Fire Training Adviser
Public Service Institute of Pennsylvania

Photographs by Ed Kehl and Jim Kepler
Pennsylvania Fire School Staff Photographers

REALISM in fire training pays off. It is one thing to throw water on an imaginary fire and quite another to advance on an actual fire with a hose stream. A man who has extinguished a gasoline spill fire with a dry chemical fire extinguisher has gained more confidence than he could by simply studying about it or by watching an instructor operate the extinguisher.

The Pennsylvania Fire School has adopted realism in a big way. Fires in buildings, oil tanks, industrial equipment, a tar kettle, a gasoline tank truck and an airplane, are extinguished. Each student is given his turn to fight fire. Rescue students use resuscitators, a life net, and a fully-equipped ambulance and even turn "nudist" and learn underwater rescue operations, using special shallow diving equipment, at the Y.M.C.A. pool. Men who are learning to be instructors and drillmasters gain confidence through practice teaching. Fire prevention students learn inspection work by making actual inspections of buildings.

For the average fireman, fire fighting experience builds up slowly. A fire school program in which he fights fires of many types under the watchful supervision of expert instructors, condenses the experience of many months into a few short days.



(At left) Aerial ladder training. First man operates the aerial under the supervision of the instructor. Then next man, after watching the first, takes his turn, and so on, until each student has raised, extended, retracted, and lowered the big stick. Individual instruction is stressed.

"Sarah" is the object of many a rescue. Originally a department store dummy, she has been altered to make her heavier and more flexible. "Sarah is blonde, about 5 feet, 3 inches tall, weighs about 110 pounds, properly distributed.

"O.K., boys, I've shown you how to make a salvage cover water chute on a stairway. Now let's see you do it."

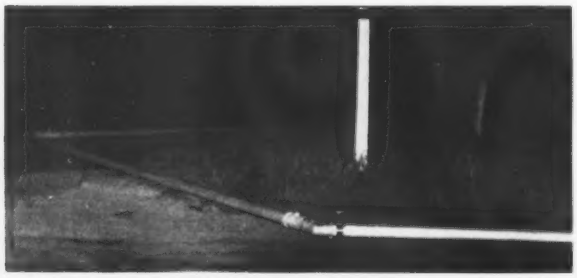
Each member of this group will have his turn at the nozzle for real fire fighting experience in using a fog stream.

Learning to handle an airplane crash fire. Specialized crash fire fighting is not taught, but rather the use of ordinary municipal fire equipment available to the average fire department.

General view of oil tanks and buildings used for practice fires. The Thirteenth Annual Pennsylvania Fire School will be held at Lewistown August 6-10.

Pipe Line Demonstration

IN a recent demonstration before the Hartford County civil defense directors, firemen and auxiliary firemen of Manchester, Connecticut, laid 1080 ft. of 4-in. aluminum irrigation pipe in 7 minutes. With a 750 gpm American LaFrance pumper taking suction from a reservoir a 1½-in. stream was supplied on a turret nozzle fed by two short lines from a 500 gpm trailer pump. Pressure at the end of the pipe line was approximately 50 lbs. indicating about 10 lbs. loss per 100 ft. with about 450 gpm flowing. Ex-chief Albert Foy is fire defense director for Manchester. The town has two fire departments. Chief J. Merz is in command of the Manchester department and Chief J. Schaub commands the South Manchester department. Chief Schaub reports that farmers in the town have made 3½ miles of the irrigation pipe available to his department on call and two miles of this is of 6-in. diameter. Also large capacity irrigation pumps are available on call. Chief Schaub believes that in addition to possible use in civil defense fire fighting, the portable pipe lines will prove invaluable at large fires in areas served by small water mains.



Robert F. Nauman photo

Readers' Comments

National Fire Protection Association,
60 Batterymarch Street,
Boston 10, Massachusetts.
Gentlemen:

Referring to the article "Making a Good Job of It" in your issue of April, 1951, it may interest you to know that this department has been using the lay described therein for the past five years. We have found that a doughnut roll dropped at the hydrant speeds operations.

Very truly yours,
Ilwaco Volunteer Fire Department
M. N. Moore, Secretary

Soft Suction Hook-up

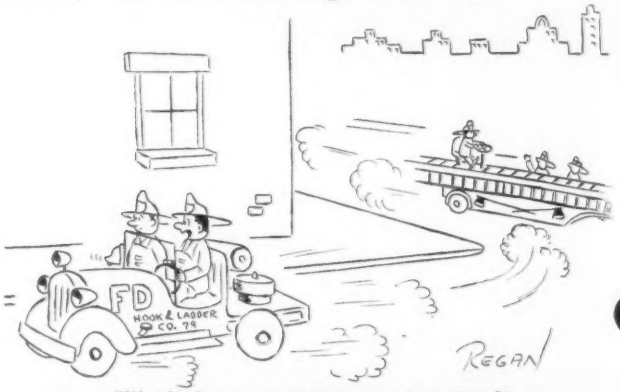
THE Detroit Fire Department has equipped all pumpers with a suction connection at the front of the vehicle to which a large suction hose is carried attached. This saves much time in making hydrant connections, particularly when there are parked cars and heavy traffic. Instead of having to line up the side pumper suction outlet with the hydrant's "steamer connection" the operator merely noses the truck toward the hydrant and has plenty of suction hose to make the connection easily, while the hosemen are running lines from the rear. This also keeps the suction hose out of the way of the operator's panel at the side of the apparatus.

1951 Photo Contest Fire Photographs

AT the recent Annual Meeting of the NFPA awards were made to the winners of the Fire Foto contest, sponsored jointly by the NFPA and the National Press Photographers Association. (FIREMEN for June, 1951.)

These pictures and a selection of other outstanding entries have been reproduced in a handsome book, containing altogether 65 pictures of action on the fire grounds. This book may be obtained from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts. Price $1.00 per copy with attractive discounts for quantity purchases.

The contest will be sponsored annually. Contest information may be obtained by writing to M. R. Freeman, Public Relations Manager of the NFPA.



"Wonder how our new tillerman is doing, Eddy?"

FIRES IN THE MIDDLE OF MAY

Philadelphia, Penn., May 18 (*Acme*). An estimated $500,000 damage was the result of this fire that involved 400 feet of Pier 46 on the South Delaware River and the S.S. *Pineland*, out of Leith, Scotland. Men working in the vicinity had to travel considerable distance to give the alarm and when members of the Philadelphia Fire Department arrived both pier and ship were heavily involved.

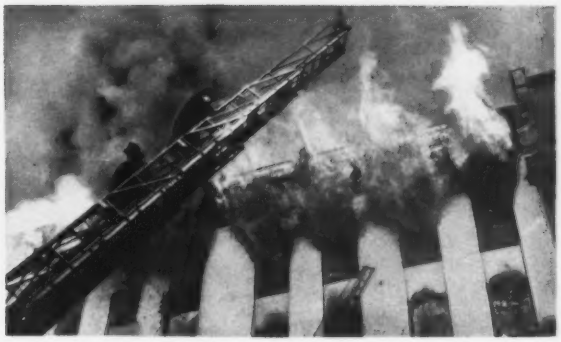
The building had steel frame walls with corrugated iron covering and steel trussed roof with yellow pine mill sheathing covered by tar paper and pitch. Altogether 21 engine companies, 3 fire boats, 5 ladder companies and a rescue squad employed thirty-four 2½-in., three 3½-in. lines, seven "monitors" (wagon pipes) with 2-in tips, and a high pressure pipe line. Lines were advanced from the land end of the pier while the fire boats went into action from the river side.

The ship had been loading cargo when the fire started and approximately 50 crew members and workers in the vicinity were forced to leap into the river. Three of these men drowned. Thirteen fire fighters were treated for injury.

Baltimore, Md., May 19 (*World Wide Photos*). Baltimore fire fighters have been running into hard luck this year. There were 31 multiple-alarm fires in the first five months. This fire in the old Cross Street Market necessitated the use of 40 engine companies, 1 hose company, 8 ladder companies and a water tower.

The market consisted of retail stores of various occupancy, with dwelling units over some of the stores. A watchman, making one of his continuous rounds, saw the fire in the north side of the building and called the fire department. Shortly after arrival of apparatus the fire mushroomed rapidly throughout the 246 stalls in the market. Intense heat helped to involve 13 more buildings on the south side when the wind changed.

Water supply consisted of 10-in. mains with hydrants spaced 150 to 200 feet apart. The water tower, hose company, and monitor pipes were placed into service while hand lines were used on the north and south sides. Despite efforts of the fire fighters, loss amounted to approximately $2,000,000.



Peterborough, Ont., May 19 (*Associated Press Wirephoto*). Four fire fighters lost their lives when they were trapped by the collapse of the roof and upper floors of this building. Three were members of the city fire department and the fourth was a volunteer fire fighter. Two cave-ins occurred — the first when seven men were trapped and three escaped, and the second when five were caught and all freed.

The fire involved a complete business block and damage amounted to an estimated $300,000. It was discovered by a police officer when an explosion blew out a second-story window in one of the business buildings. The fire spread up an elevator shaft, leaped a firewall and involved an adjacent building. A series of explosions occurred during the first hour of fire fighting, and before the fire was under control the roof, upper floors, and main floor of the buildings had been weakened enough to collapse.

McMechen, West Va., May 15 (*Acme*). A watchman making his rounds at 3:40 a.m. discovered fire in an office and miscellaneous parts storage section of this warehouse. Unable to get to the telephone in the building he had to arouse neighbors to telephone an alarm to the fire department. Forty minutes elapsed before the fire department was contacted and the first piece of apparatus arrived.

The building contained metal and plastic toys in corrugated paper cartons and miscellaneous materials. It was a large, open warehouse with no sprinklers, fire walls or partitions. This combination and the delayed alarm presented fire fighters with a completely involved building.

The McMechen Volunteer Fire Department was first to arrive at 4:20 a.m. Calls were made to the fire departments of Moundsville, Benwood, and Wheeling, who responded with men and equipment. Four 750 gpm pumpers, a 350 gpm pumper, 2700 feet of 2½-in. hose, 400 feet of 1½-in. hose and a deluge gun were used. Water supply consisted of 4-in. mains with hydrants spaced at 500 to 700-foot intervals. These mains were supplied by a 392,000 gallon reservoir whose level was reduced to 16 inches during fire fighting operations. When this occurred two pumpers drafted from the nearby Ohio River.

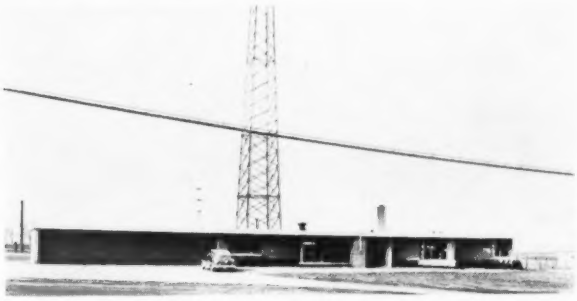
The roof of the building collapsed in approximately twenty-five minutes and efforts were concentrated on covering exposures.

Total loss on the building and its contents was estimated at $1,330,000.

Radio Network in Lake County, Illinois

NINETEEN public safety agencies are joined in a countywide radio network in Lake County, Illinois, to facilitate their police and fire communications. Volunteer fire departments in seven of the towns and police stations in twelve towns of the area are linked to a master transmitter and receiver located near Libertyville.

Hub of the network is the modern one-story building (shown at right) which houses the equipment designed and engineered by Harry Quandt, World War I navy radioman, and Motorola, Incorporated. Mr. Quandt (shown seated in picture at left with Chief Deputy Sheriff Walter L. Atkinson, standing), also arranged to install a 10-kilowatt Kohler electric plant for standby power. Powered by gas, this generator automatically operates when public power fails.



Fifteen years ago, Mr. Quandt and the late sheriff, T. E. Kennedy, donated $200 to set up a county radio equipment fund. Until that time, a 50-watt transmitter was all the department had. But Mr. Quandt convinced the county board that an area-wide system was desirable and several communities agreed to join the network. However the law at that time permitted no such intercity communication, so the Illinois legislature obliged by changing the statute. Now all towns pay a service and maintenance charge and their fire and police activities benefit from the modern communications available to them.

Oberlin, Ohio, Uses New Radio Dispatch System

VOLUNTEER firemen in Oberlin, Ohio, are alerted and receive instructions through a recently installed FM radio system. It is a selective dispatching device developed by General Electric Company's Electronics Department at Syracuse, New York.

A radio receiver, tuned to the frequency of the town's police two-way radio system, is located in each of the homes of 27 volunteer firemen. When a fire is reported to the police radio dispatcher's office, the dispatcher pushes a button and can immediately broadcast the alert to all firemen, in addition to the police cruiser. The firemen do not hear messages intended only for the police.

Engineers who installed the system claimed that as many as ten agencies like the volunteer firemen can be contacted individually from a single two-way radio transmitter through use of the selective dispatching equipment.

(Below) E. Philip Zahm, assistant city manager of Oberlin, points out the widespread homes of the town's 27 volunteer firemen. Installation of the system has led officials of the town to plan to equip its public utility vehicles with two-way radio, tying them into the selective dispatching system. Messages broadcast from police headquarters would be received only by the vehicles whose special button was pushed.

(Left) Oberlin fireman Philip C. Baxter is shown using the new dispatch system. By pressing a button he may contact all firemen at once through receivers in their homes.

(Below) The police radio station at Oberlin. The new system has possibilities for alerting key personnel in civil defense and in peacetime disasters.

Forest Fire Campaign Poster

IN cooperation with the United States Forest Service, the State Foresters, conservation groups, and the lumber industry, Philip Morris & Company has given its support to another nation-wide forest fire campaign. One hundred thousand of the above posters will be placed in and around all national and state parks, forest preserves, and other timberland areas.

Actual size of the posters is 11 x 16½ inches. Readers of FIREMEN who wish to obtain some should write to Philip Morris & Company, 100 Park Avenue, New York 17, New York, stating how many are required and the manner in which they will be used.

"By the way, Cassidy, what did you mend your boots with?"

Friend of the Firefighter!

MIDWESTERN
PROTECTIVE CLOTHING

The Original Mackinaw Striped Safety Coat

Reduces Accidents - Saves Lives

Several years ago, Midwestern developed the *original* striped safety coat. The highly visible stripes are moulded to and vulcanized as part of the material. Thousands of Midwestern Safety Coats are serving fire departments throughout the world. Service records prove these garments not only offer high safety visibility, but have the qualities required to withstand the rough usage required in your hazardous work of protecting life and property against fire.

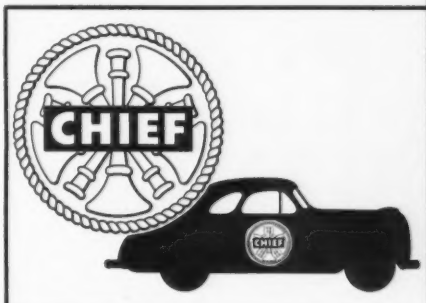
All Midwestern Safety Coats have the moulded-in yellow stripes which are a part of the garment and not painted or sewed on. The *original* Midwestern Safety Coat will give you trouble-free protection and dependable service.

PROTECTION - COMFORT - SERVICE

Largely through superior quality, design, fabric texture and advanced features, Midwestern is a leader in the field of firemen's clothing.

For full information on our complete line, see your Midwestern dealer. A letter to the factory will also bring you material samples for your inspection

MIDWESTERN MFG. CO., Mackinaw, Illinois
Manufacturers of the Famous **MACKINAW Coats**



NEW

FIRE CHIEF'S INSIGNIA FOR AUTO DOORS

Now for the first time ever you can get Fire Chief's Insignia for your car doors.

Richly colored and distinctive in gold and black. Full 14" in diameter.

Manufactured in our Du-Cal type for easy water application. All-lacquer and long-lasting.

Priced in sets of two . . . only $7.50 per set. Additional pieces $4.00 each.

WRITE TODAY

WINDSHIELD DECALS IMPRINTED WITH YOUR OWN COMPANY NAME

Richly colored, inexpensive all-lacquer windshield decals that give positive identification and stay on! Your company name and address imprinted on bottom panel. Write for our descriptive brochure today!

UNITED STATES DECAL CO.
P.O. BOX 193 WILLIAMSVILLE, N. Y.

NFPA Member Departments

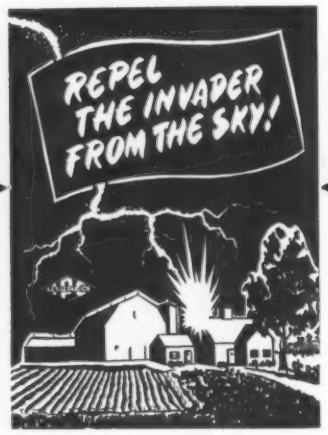
Marydel Volunteer Fire Company, Incorporated
Marydel, Maryland

LOCATED on the state boundary between Maryland and Delaware, this department protects an area of about 110 square miles and is headed by Chief T. E. Heather, Jr., Assistant Chief Lee A. Leslie, President H. B. Logan, and Secretary Paul B. Smith. The department has a total membership of 85 including 24 active fire fighters. It operates as a non-profit corporation with a nine-man executive board and has six fire officers.

Apparatus includes a 300 gpm Mack pumper carrying 1500 ft. of 2½ in. hose and an International truck with a 600 gallon tank and a 500 gpm pump. The department has plans for purchasing an 800 gallon tank and a new pumper.

Funds are raised through carnivals and subsidies from the county and state governments. A Women's Auxiliary of 32 members is headed by Mrs. Virginia Butts. The members of the department attend fire schools at the University of Maryland and the University of Delaware. They also participate in a field day sponsored by the Caroline County Volunteer Firemen's Association and in pumping drills sponsored by the Kent County Volunteer Firemen's Association.

IMPROVED LIGHTNING RODS



You may have complete confidence and assurance against loss of life and property with I.P.C. Improved Lightning Rods installed on your buildings.

Write for more information

INDEPENDENT PROTECTION CO., INC.
GOSHEN, Dept. F-1 INDIANA

420 Lexington Ave. New York 17, N. Y.
Murryhill 6-8897

Lymansville, Rhode Island, Fire Department

HEADED by Chief Wilfred Payette and Assistant Chief Thomas L. Buco (shown above) this department is the oldest of the five fire departments that serve North Providence. It protects a community of 2000 population, and has a total membership of 150, with 30 active fire fighters.

Lymansville also has 20 members who serve as a rescue and ambulance crew. Shown above is the 1947 Maxim 750 gpm pumper with a 100 gallon booster tank and a 1942 Buick ambulance which are used by the department. The ambulance is the property of the North Providence Chamber of Commerce, which maintains it financially, but it is manned by members of the department who have first aid certificates and who serve the entire town of North Providence.

Funds for the department are raised by carnivals held each year and by dues collected from members. There is an active women's auxiliary of 40 members headed by Mrs. Ralph Greico. Recently the department conducted a house-to-house canvass for funds for the purchase of a new resuscitator for the ambulance.

Training consists of monthly drills for crew men and combined drills with other companies in the town and with the Woonasquatucket Valley League. The department participates in the Rhode Island State musters and attends the Connecticut State League Convention.

New Clarus, Wisconsin, Fire Department

SOME of the funds for the New Clarus Fire Department are raised by an annual banquet and dance sponsored by the 24 active members. Chief Jacob Bruni, Assistant Chief Gilbert F. Ott, and Secretary Arnold W. Kehrli are the appointed officers of the department.

The department protects the village of New Clarus and several township rural areas. The fire station is of brick exterior and houses a 350 gpm pumper and a 500 gpm pumper with 1000 feet of 2½-in. hose and 200 feet of 1½-in. hose. Four men comprise the first aid squad having a complete first aid kit and a resuscitator.

Members are paid $1.50 for the first hour and $1 for subsequent hours for drills and fires attended. The department attends the Southern Wisconsin and Northern Illinois Fire Schools.

Protection Against Lightning

(*Continued from page 7*)

Metal Bodies of Extended Form

It is to be understood that metals of extended form, may, on account of their extended parts, size and relative position to the lightning conductor, contribute in their effect as bodies of conductance (actual conductors), or bodies of inductance (subject to being charged). Metal bodies of conductance are permanently fixed to a building that may be subject to direct lightning discharges.

Unless the metal body is in direct contact with the lightning conductor, or otherwise adequately grounded, a lightning flash is liable to occur across the gap. It may be likened to an air terminal disconnected at its base from a main lightning conductor. Metal bodies of conductance, when liable to receive a direct discharge, should be connected to the lightning conductor or independently grounded. Materials for interconnecting, should be equivalent to the main conductor and fittings. Metal bodies of conductance, are frequently among the following: hay tracks, high eave troughs "above second floor," metal roofing, ridge rolls, valleys, cornices, ventilators, chimney extensions, wire fences, clothes lines, signal wires, guy wires, litter tracks.

Metal bodies of inductance, of considerable size, are liable at times to electrify in opposite potential to that of the ground, or the grounded lightning conductor. Such metals in close position (6 feet or less) to the lightning conductor may cause an induced spark across the intervening gap. These metals of inductance shall be connected to the lightning conductor system. Interconnect such bodies of inductance and extended form with the lightning conductor when within six feet. When more than six feet apart disregard the connection.

Other Electrical System Grounds

AUTHORITIES are recorded as encouraging the bonding together of the several ground electrodes on the premises.

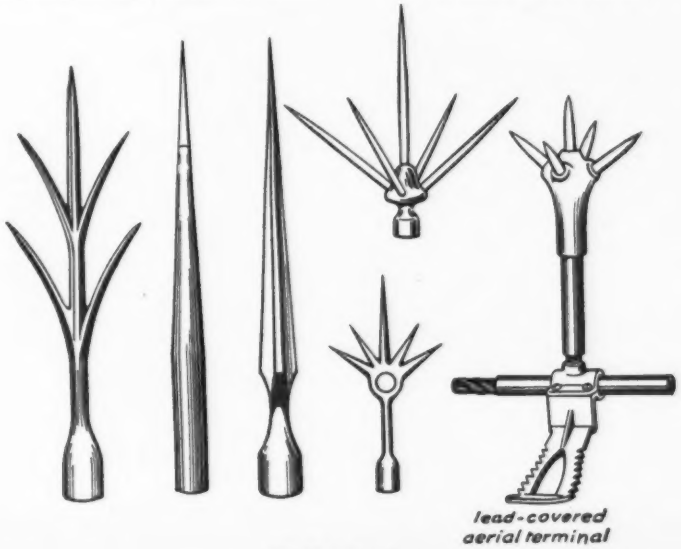
Rule 2586 of the National Electrical Code for electric wiring and apparatus reads as follows:

Use of Lightning Rods. Lightning rod conductors and driven pipes, rods, or other made electrodes used for grounding lightning rods, shall not be used in lieu of the made grounding electrodes required by this Article for grounding wiring systems and equipment. The foregoing provision shall not be taken to forbid the bonding together of the several made electrodes that are respectively provided for electric wiring systems and equipment, for communication systems, and for lightning protection. (See section 8041-b-5.)

Unprotected Buildings Near Protected Buildings

IN farm districts, buildings equivalent to and larger than 12 by 16 feet ground area and 14 feet in height to peak, when not attached to a tall protected building, but located in the open and within 50 feet

(*Please turn to page 22*)

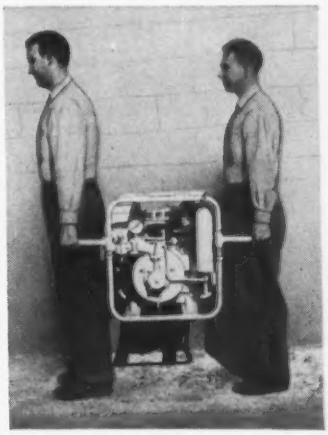


Air Terminals

Hale Type FZZ

Fine For Relaying to Major Pumper . . . .

Easily Carried by 2 Men



Chief Leon Arnold of Newellton, La., writes . . . .

We have received from you your portable Pump, Type FZZ, which we are thoroughly satisfied with. We have only had to use it once since our purchase in September of last year, but it did a big pump job for 1¾ hours through a 300 ft. line of 2½-inch hose branching off in a "Y" to two 1½-inch lines, 150 ft. each.

We carry this unit on our 500-gallon pumper to use in places where we can not get near enough to water. Two men can easily carry it any place.

We recommend the Hale FZZ Portable Pump for any Fire Department.

The Hale Type FZZ portable fire pumping unit pictured at top can be easily carried by two men to source of water which truck cannot reach, for refilling booster tank or for fighting fire direct. Unit is also available mounted on two truck-type wheels or on rubber-cushioned steel channels.

The unit can be mounted on virtually any apparatus, making it possible to fight fire while apparatus is in motion, using booster tank for source of water.

Capacity of FZZ is 60 G.P.M. at 90 lbs. pressure; 150 G.P.M. at 30 lbs. pressure. Provides two capable fire streams through 1½" hose lines, using ⅝" nozzles.

Note: Discharge Adapter can be supplied for use with 2½" hose.

Ask for demonstration. No obligation

Write today for FZZ Folder to

HALE FIRE PUMP COMPANY

CONSHOHOCKEN, PA.

Fire Pumps in All Standard Capacities

CARPENTER LIGHTS

HIGH POWER PORTALITE

The finest dry battery portable light made. Mile range. Powerful search-light beam for 8 to 10 continuous hours. Instantly ready for any fire. Diameter 6". Size 14" high x 10" x 6". Only 9 lbs.

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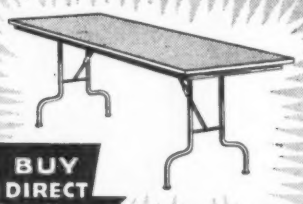
"Master-Light-Makers for 35 Years"

CARPENTER MFG. CO.
168 MASTER-LIGHT BLDG.
BOSTON - 45 -
SOMERVILLE, MASS.

REDINGTON

FOLDING CHAIRS *in* STEEL or WOOD

FOLDING BANQUET TABLES



BUY DIRECT
SAVE MONEY and TIME

Write for Catalog!

J. P. REDINGTON & CO.
Dept. 97 - Scranton 2, Pa.

Protection Against Lightning

(Continued from page 21)

of the building, are regarded as prominent and lightning hazards.

Wire Fences

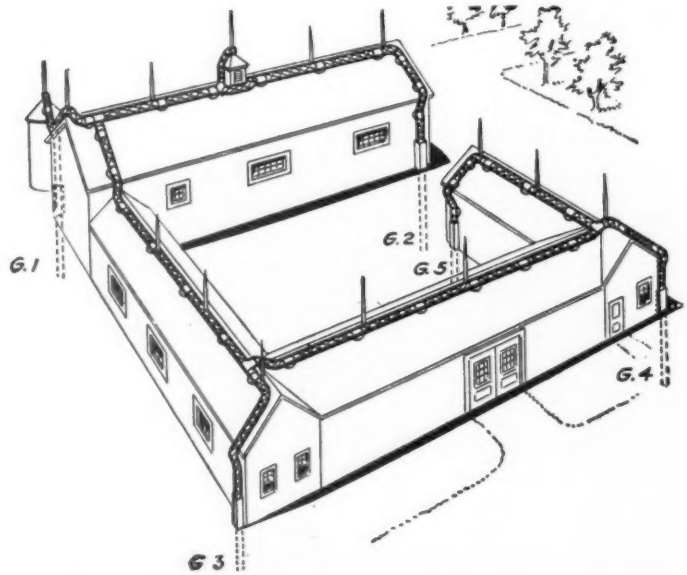
Wire fences are many times better conductors of electricity than the ground on which they stand. When a flash of lightning occurs at any spot on the earth surface, the entire surrounding region discharges to that spot at the same instant. The wire fence extending through this area offers an easier way for the discharge than does the adjacent soil, and thus becomes live. The most dangerous of these fences are those constructed with posts of poorly conducting materials such as wood or concrete. Fences built with metal posts set in the earth are as safe from lightning as it is possible to make them, especially if at intervals of about 1,000 feet the flow of electric current is stopped by inserting fence panels of wood, or lengths of insulated materials, to the ends of which the fence wires can be attached.

Wire fences with wooden or concrete posts should be grounded by inserting galvanized iron posts at intervals of 150 to 300 feet, or by connection of the fence wires to ½ to ¾ in. galvanized iron pipe, or copper covered steel rods, driven at least three feet into the ground.

Distant Flashes

Lightning under certain conditions can start a fire in a building and not be within half a mile of it. This is due to electro-static sparks between metals, within the electrified earth area at the moment of the distant flash. If a metallic pipe or wire which is connected with the earth comes within ¼ in. of a fair-sized piece of metal that is insulated from the earth, then when the lightning flash takes place some where else in the electrified field, a spark will pass between these metals and if something very combustible is in the area of the spark we will have a fire. This can be prevented if the rods are installed by a competent lightning protection engineer.

Underwriters' Laboratories of Chicago inspects and tests the component parts of lightning rod systems. It should be specified that conductors, mountings, ground plates, and other parts of the system, as well as the rods themselves, be of types which have the approval of Underwriters' Laboratories. As a further service, Underwriters' Laboratories will test and inspect a lightning rod installation after it is completed and affix a "Master Label" of approval. This is the most satisfactory assurance which the property owner can obtain that the lightning rod installation he has provided will actually give him the safety from the lightning hazard he has reason to expect.



Typical Installation on a Barn Group

How to Inspect a Lightning Conductor System

1. What is the condition of the lightning conductor?
   Make sure it is the approved type.
   Make certain there are no breaks in conductor system.
   Be sure it is properly placed and securely attached.
   Check to see that conductor cable is properly coursed and that there are no "U" or "V" pockets.
2. Is the lightning rod system properly grounded?
   Are the grounds down to permanent moisture? Test grounds for ohmic resistance and make certain they are adequate. If there is a water system in the building make sure there is a connection between the lightning conductor and the water pipe at the point of entrance if at all possible.
3. Is there a sufficient number of down leads?
   They should be evenly distributed around the building and located at the corners whenever possible.
   Down conductors coursed directly over an end from a ridge should be changed to corners so eaves can be bonded in.
4. Are air terminals properly spaced?
   Air terminals should not be spaced over 20 feet apart, and should be within 2 feet of ridge ends.
   Check conditions and examine connections to conductor.
   See that air terminals are in an upright position and that they are securely anchored.
5. Do all chimneys have protection?
   All chimneys should have a point attached.
   Large chimneys require more than one point.
6. Has a "wing" or an "ell" been added that requires protection?
7. Have all high dormers with ridges exceeding 3 feet and other roof projections been provided with necessary air terminals and properly interconnected with the main lightning protection system?
8. Has there been a connection made between the lightning protection system and the water system?
9. Have all attached wires such as electric light and power lines, telephone wires, radio antennas, clothes lines, wire fences, etc., been properly grounded?
10. Are there vent pipes extending through the roof, within 6 feet of conductor, that are not interconnected? Are there eave troughs or other projected bodies that are not grounded to the lightning protection system?
11. Has the hay track in the barn been connected to the lightning rod system?
12. Does the silo have adequate protection?
13. Has the litter carrier been properly grounded?
14. Have all door tracks and other metal bodies within 6 feet of a conductor, that are a permanent part of the structure, been connected to the lightning protection system?
15. Have metal cattle stanchions been properly grounded?
16. Have all near-by buildings been protected?

Do You Know

How Fast Horse Drawn Equipment Answered An Alarm?

(SEE ANSWER BELOW)

ANSWER: Veteran fire fighters agree that these highly trained horses charged from their stalls, were in harness and off to the fire in *LESS THEN HALF A MINUTE* after an alarm was received.

You Can Also Go Into Action FAST With

INDIAN FIRE PUMPS

Modern, up-to-date fire truck with INDIAN FIRE PUMPS mounted in place.

Photo courtesy H & H Truck Tank Co., Jersey City, New Jersey

Today's fire departments, foresters, lumbermen, campers and private citizens find INDIAN FIRE PUMPS the answer to their need for speedy fire fighting.

A man with one of these famous backpack extinguishers won't lose a minute attacking fires on roofs, in fields, brush, in buildings, rooms or rubbish. When seconds count—use INDIANS.

INDIAN FIRE PUMPS are ideally suited for Civil Defense work. Send for catalog.

D. B. SMITH & CO.

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PACIFIC COAST BRANCHES:

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Titan Chain Sears, Inc.
3700 Fourth Avenue South
Seattle, Washington

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CANADIAN AGENTS:

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Get a supply of INDIAN FIRE PUMPS now to protect your home, buildings and property against fire bombs. This is important.
AGENTS WANTED

ATTENTION FIREMEN!

Personalized
AUTO DISPLAY PLATE

FIRE COMPANY 19
JOHN J. JONES
HUB CITY, OHIO

WITH FIREMAN'S AUTHENTIC INSIGNIA

Every volunteer fireman will want a personalized auto display plate signifying personal identity and pride of membership. Its durable weather resistant material will not rust. Fluorescent glo-brite finish radiates light in all directions for easy idenification. Also available for paid companies. Size 2¾" x 4¾".

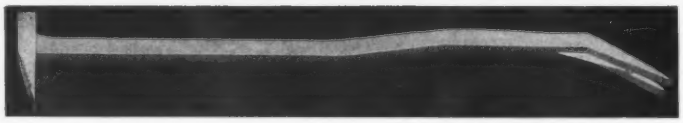
Sold only DIRECT to you. Not available in stores. $1.00 for the PERSONALIZED AUTO DISPLAY PLATE with three lines of engraving. For a set of two $1.50.

When ordering please print plainly each of the three lines to be engraved. Limit engraving to 22 letters on each line. We pay shipping charges. ORDER TODAY FOR PROMPT DELIVERY.

Send Check, Cash, or Money Order to:

TA-CO Manufacturing Company
Department E21
8259 Melrose Avenue - Los Angeles 46, California

HOWE Fire Truck Equipment Meeting Every Service Since 1872
Centrifugal, Rotary, and Piston Pumps supplied
HOWE FIRE APPARATUS COMPANY, 1406 West 22nd Street, Anderson, Indiana



TRUMPET
UTILITY BAR

Utility bars are not all alike. Careful development in design has made the "Trumpet" outstanding for fire fighting, rescue, salvage work. Provides unusual leverage—gains entry where others won't. Does more jobs faster.

"Trumpet" utility bars are forged from Hi-carbon steel and flame hardened for unusual strength and durability. Now available for shipment out of stock. See your Wooster Brass representative or write direct.

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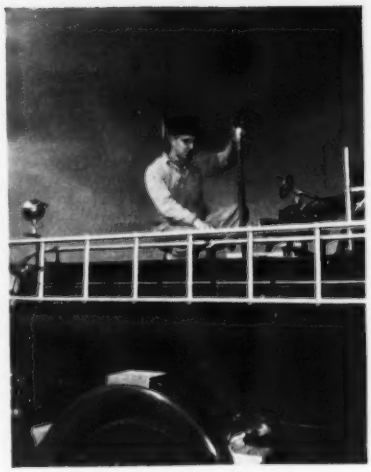
MANUFACTURERS OF A COMPLETE LINE OF DISTINCTIVE FIRE FIGHTING EQUIPMENT



Anodes for Tank Trucks

ONE of the means of minimizing corrosion in fire department water tank trucks may be the installation of a magnesium or aluminum anode. Shown above is one of the fire trucks of the Dow Chemical Company, Midland, Michigan, which has had this magnesium anode for a period of years with reportedly satisfactory results.

The potential difference between magnesium and steel will vary from 0.7 to 1.0 volts. In waters of very high conductivity, this potential difference is sufficient to drive a current through the water to the steel walls. This process inhibits corrosion on the steel walls of the tank.

Anodes should be submerged at least 50 percent of the time for best efficiency. In the case of water tanks for fire protection this would mean that the tanks should be kept full. This is good practice since it will help to minimize movement of the water load while the truck is in motion. Some departments have a blow-off valve to exhaust the air and always fill the tank completely with water.

One problem that arises with the use of magnesium anodes is that there exists some possibility of the magnesium corrosion products getting into the pump. Screens placed in the pump intakes will help to minimize this action.

Aluminum anodes are used in a similar manner. They generally require replacement about every nine months. If a tank is badly rusted or corroded anodes might need renewal more quickly because when they become heavily coated their effectiveness is appreciably reduced.

New Jersey State Hospital Fire Department

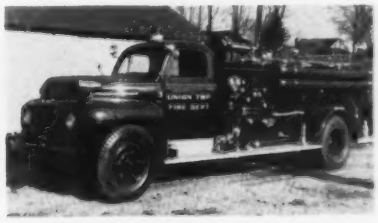
HEADED by Chief Charles H. Acker and Assistant Chief George Arnold, the New Jersey State Hospital Fire Department at Greystone Park (member NFPA) protects an institution housing 6500 patients. The department has two other paid firemen and 50 volunteer members, all of whom are employed regularly on the hospital grounds.

Recently the department purchased a new American LaFrance Service Aerial truck with an 85-foot ladder. The truck is also equipped with 50-foot and 40-foot extension ladders, 28-foot, 24-foot, 20-foot and 16-foot trussed ladders; 16-foot and 12-foot straight side roof ladders, and a 12-foot folding ladder.

Other emergency equipment permanently assigned to the new truck includes a life net, an oxy-acetylene emergency cutting outfit of the pack type, a demountable ladder pipe, a deluge set, three Scott Air-Paks, and four All Service masks.

Shown above with the new ladder truck is some of the other apparatus belonging to the department. On the left is a new Ford half-ton pickup truck purchased last year to replace an old squad car. Next to it is an Army surplus truck with a 500 gpm American Marsh front end pump and beside the ladder truck is a 750 gpm Ward LaFrance pumper purchased in 1947.

All personnel of the hospital, including doctors, nurses, and attendants, are trained in recognizing and correcting fire hazards and in the handling of portable fire-fighting equipment. Fire drills are held regularly. All new employees are instructed in fire prevention by Chief Acker.



New Apparatus for Lakeville, Indiana, Fire Department

THE Lakeville, Indiana, Volunteer Fire Department (member NFPA), in Union Township, recently acquired the two new pieces of apparatus shown above.

The tank truck shown on the left is used to supplement the water supply on the pumper. It carries a 300 gpm portable pump, 20 feet of 2½-in. hard suction hose, a stretcher, a first aid kit, shovels, an axe, 3 asbestos suits, coats, boots, extra wetting agent, and foam.

On the right is a pumper mounted on a Ford F-7 with 145-horsepower capacity. It consists of a 500-gallon booster tank, a 500 gpm American Marsh pump with wet water and foam proportioners, 2 reels with 200 feet each of 1-in. high-pressure hose, electric rewinds for the booster reels, 1000 feet of 2½-in. hose, two 200-ft. lines of pre-connected 1½-in. hose, a 40-foot aluminum ladder, twenty pounds of dry powder extinguishers, 2 "Chemox" masks, an inhalator, a stretcher, and a first aid kit.

The entire Lakeville Fire Department has been trained in first aid by the Red Cross. It has a membership of 35 men, including 21 active fire fighters headed by Chief Walter Hamilton.

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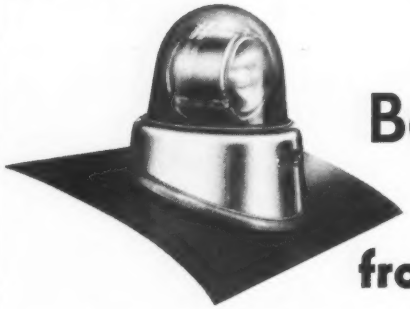

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Two Powerful sealed-beam lamps, mounted back-to-back, rapidly rotate for complete 360° protection on the way, or standing still at the scene of a fire. As more and more fire departments specify BEACON-RAY, this sweeping flash of intense light is becoming THE symbol of fire fighters on the way . . . automatic clearance of right-of-way from *all angles!*

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New Hose Drying Manual tells how to dry, store and conserve fire hose.

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Membership Report

FIRE Department Membership in the NFPA costs $12.50 per year. Through this membership, chiefs of fire departments and fire departments are entitled to receive six subscriptions to FIREMEN and single subscriptions to the NFPA *Quarterly* and *Fire News*. Additional subscriptions to FIREMEN may be obtained for $1.25 each. Individual NFPA members of the uniformed receive a single subscription to each of the above publications with their membership. For further information write to the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

NFPA Welcomes:

The following departments who have subscribed to NFPA Fire Department Membership. Total membership at present is 1,483 fire departments and 20,611 men.

British Columbia: Mission Volunteer Fire Brigade, Mission City.

Chile: Cuarta Compañia de Bomberos de Viña del Mar, Viña del Mar.

Idaho: Wallace Fire Department, Wallace.

Illinois: Marguette Heights Volunteer Fire Department, Marguette.

Maryland: Morningside Volunteer Fire Department, Incorporated.

Massachusetts: Haverhill Fire Department, Haverhill.

Missouri: Waverly Volunteer Fire Department, Waverly.

New Jersey: Fire Prevention Bureau, Carlstadt.

New York: D. W. Jenkins Hose Company, Central Bridge.

Ohio: Chief Laurence C. Maloney, Canton; Sebring Fire Department, Sebring.

Oklahoma: Wagoner Fire Department, Wagoner.

Pennsylvania: Upper Rurrell Township Volunteer Fire Company No. 1, New Kensington.

Texas: Bryan Fire Department, Bryan.

Virginia: Cape Charles Fire Company No. 1, Cape Charles.

Washington: Naches Fire Department, Naches.

Fire Schools in 1951

Kansas: The Kansas Fire School will be at Hutchinson, October 15–18. This school was previously announced in FIREMEN for the dates of October 22–25.

Montana: The Twelfth Annual Montana State Fire School will be at Polson, September 5–8.

Pennsylvania: The Thirteenth Annual Pennsylvania Fire School will be at Lewiston, August 6–10.

Virginia: The Virginia State Fire School will be conducted at No. 9 Station, 115 Thole Street, Norfolk, September 10–14.

NFPA Regional Meetings

FIRE Department Members on the West Coast will have an opportunity to attend two regional meetings of the National Fire Protection Association in the Fall.

The first of these meetings will be held October 23–24 in the Hotel Multnomah, Portland, Oregon. The second meeting will be held in Los Angeles, California, October 29–30. Members of paid, call, or volunteer fire departments are cordially invited to attend these sessions. There is no registration charge to such members who attend in uniform.

"Fire Station Design"

ANNOUNCEMENT is made by the Circul-Air Corporation of Detroit that Volume 3 of its publication "Fire Station Design" is now ready for distribution. The new edition is a 52-page brochure showing 66 of the most modern American and Canadian engine houses.

The book will be sent gratis, postpaid upon request from any chief, commissioner, mayor, or other municipal official, or others connected with the fire service or interested in projects of this type.

Write to the Circul-Air Corporation, 576 E. Milwaukee Avenue, Detroit 2, Michigan. Available also is the new "Hose Drying Manual," a treatise on the proper care and use of fire hose.

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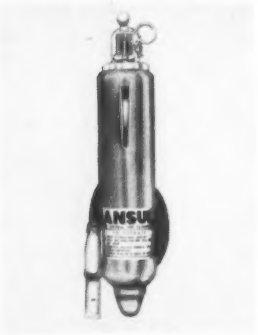
What's New in Fire Equipment?



New Dry Chemical Extinguisher

A DRY chemical extinguisher with a capacity of four pounds has been made available by the Ansul Chemical Company, Marinette, Wisconsin. Dry chemical is ejected through a self-closing nozzle in a fan-shaped stream pattern with a range of 12 to 15 feet. The Ansul 4-B weighs 10½ pounds fully charged, 13½ pounds including bracket and shipping container. It is 19 in. high, 5¾ in. wide, and 5½ in. deep, with a 15½ in. hose assembly. The extinguisher is pressurized by a 1½ oz. carbon dioxide cylinder in the dry chemical chamber. Each unit is subjected to a 600 psi. hydrostatic test.

●

3-Way Fog Nozzle

A NEW type 3-way fog nozzle has been announced by the Bete Fog Nozzle, Incorporated, Greenfield, Massachusetts. Known as the Bete G-5 the nozzle can be operated under any pressure from 30 to 50 pounds, using at 100 pounds about 8 gpm for fog and 10 gpm for straight stream. It is regularly furnished with a standard "garden hose" thread and is made of polished stainless steel and chrome-plated brass. The unit can be changed from full fog to straight stream to complete shut-off by a turn of the handle. Write to above manufacturer for further information.

Firemen's Identification Cards

IDENTIFICATION cards for firemen may be obtained free of charge by members of fire departments from the John Bean Division, Box 840, Lansing, Michigan. The cards are of "wallet-size" measuring 3½ in. wide x 2½ in. deep when folded. There are two types: one is white with red lettering, the other is of a brilliant red with black lettering. There is space for an identifying photo of the individual, for a finger print, for blood type, and other means of identification and a place for the authorizing signature of the fire chief who issues the card. On the back of the card is a list of qualifications which may be checked to indicate the individuals special talents as a member of the fire service.

●

Hand Pump for Refueling

ROTARY hand pumps that can be used for the refueling of fire apparatus between runs are produced by the Blackmer Pump Company, 1809 Century Avenue S.W., Grand Rapids, Michigan. The pumps are self-priming with a capacity of 28 gpm and have 10 feet of Neoprene hose and aluminum nozzle. A locking device prevents unauthorized withdrawals. For further information, write to the manufacturer at the above address.

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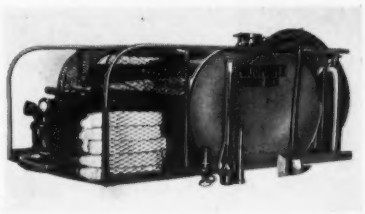

Pallet Model Fire Fighting Unit

PORTO PUMP, Incorporated, 227 Iron Street, Detroit 7, Michigan, has introduced the above portable pumping unit. It is composed of a water tank with a capacity in excess of 200 gallons, a hose rack, a demountable Porto Pump, supply hose, nozzles, and other equipment necessary to fire fighting. For details write to manufacturer at above address.

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Illuminated Plastic Signs

LICENSE plate signs for fire departments are now available in weather-resistant plastic with flat top silver reflective sheeting. Manufacturer claims that the surface is many more times brilliant at night than is white paint. The new signs measure 4 x 10 x 0.064 in. For further information write to: Pacific Reflex Signs, Box 323 McMinnville, Oregon.

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Glass Fire Helmet

NOW on the market are fire helmets made of molded Fiberglas weighing approximately 20 ounces. They are available in any color. The helmets feature ribbed crown design, with a patented six-point suspension of the headband assembly to permit removal and replacement of the entire assembly quickly. An air space is left all the way around the assembly to allow for ventilation, or the accommodation of earlaps and cold weather liners. Further information may be obtained by writing the manufacturer, E. D. Bullard Company, 275 Eighth Street, San Francisco 3, California.

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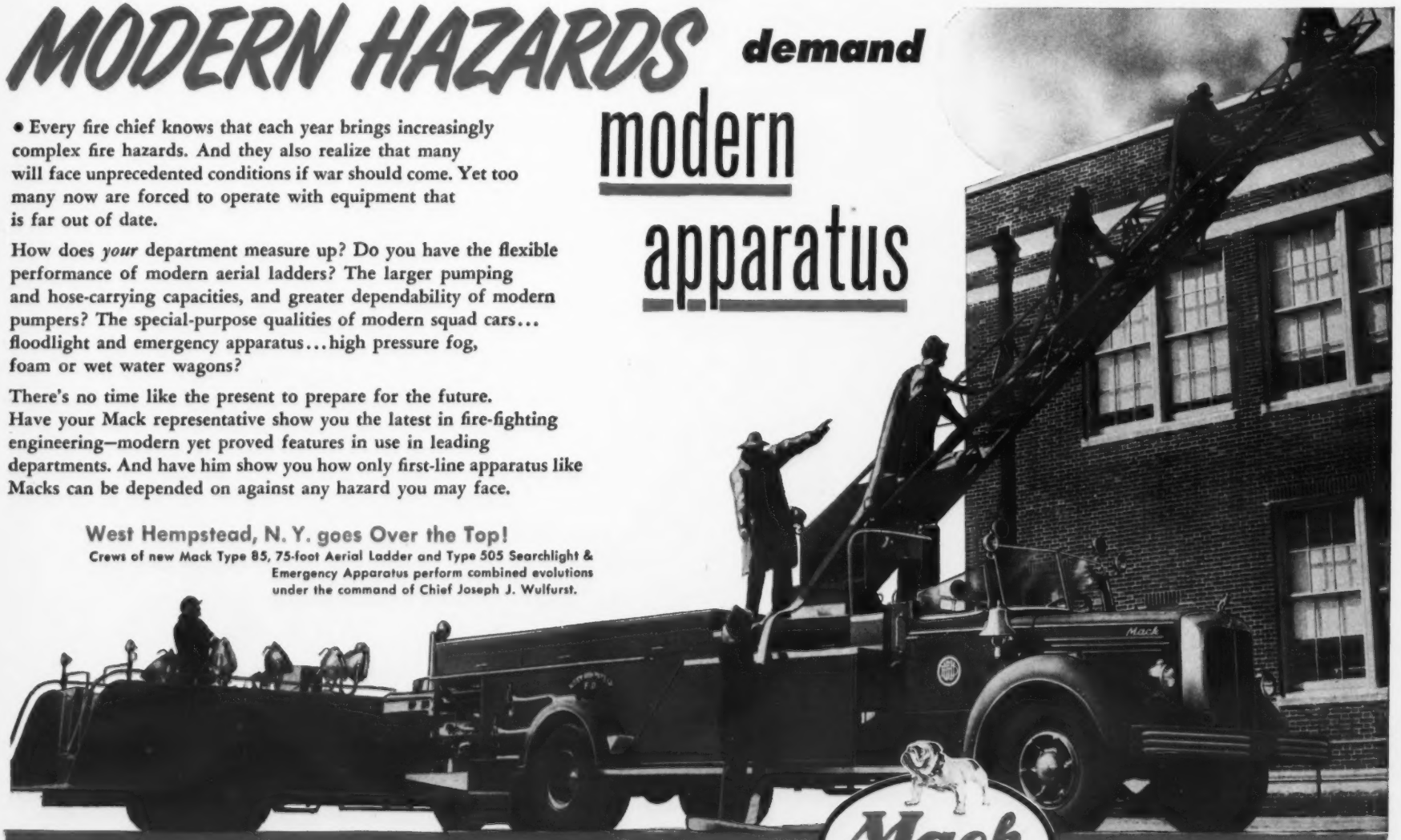

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